REMARKS/ARGUMENTS

A signed supplemental reissue Declaration is enclosed to overcome the rejection of Claims 1-50, 51, 53, 54, 56-61, and 63-65 under 35 U.S.C. §251.

Several amendments have been made to the specification in what is believed to be the proper form for reissue proceedings, i.e. with brackets around deleted subject matter and underlining of added subject matter. These amendments are merely editorial in nature.

Applicants are appreciative of the withdrawal of the recapture rejection of Claims 37-51, 53, 54, 56-61, and 63-65.

Claims 1, 2, 9, 25, 37, and 59 have been amended to add "digital" to describe the laser used in imaging. Claims 1, 25, 37, and 59 have also been amended to refer to the use of a lithographic fountain solution (from cancelled Claim 3) after imaging to remove the unexposed areas in the imaged coating and leaving an oleophilic image. Thus, an aqueous lithographic fountain solution is used for development.

Dependent claims 3, 36, and 57 have been cancelled since that subject matter has been added to the independent claims.

Dependent Claims 5-8, 17, 21, 33, 35, and 56 have been amended to provide language consistent with the amended independent claims.

Rejection Under 35 U.S.C. §112(1)

Claims 1-51, 53, 54, 56-61, and 63-65 have been rejected as not being described in the specification with respect to the laser means used for imaging. While Applicants disagree with this rejection for the reasons stated in their last response, in order to expedite prosecution, Claims 1, 2, 9, 25, 37, and 59 have been amended to add the modifier "digital" to describe the laser means and thus to overcome the rejection.

Rejection Under 35 U.S.C. §251

Claims 1-51, 53, 54, 56-61, and 63-65 have also been rejected as being based on new matter in relation to the laser means used for imaging. While Applicants disagree with this rejection for the reasons stated in their last response, in order to expedite prosecution, Claims 1, 2, 9, 25, 37, and 59 have been

amended to add the modifier "digital" to describe the laser means and thus to overcome the rejection.

Rejection Under 35 U.S.C. §103(a)

Several unpatentability rejections of the claims over various combinations of cited art have been made:

I. Claims 1-4, 7-12, 14-16, and 24 have been rejected as being unpatentable over U.S. 5,756,258 (Yamaoka et al.) in view of U.S. 4,173,554 (Sulzberg), U.S. 3,919,754 (Sorresso), and U.S. 5,599,650 (Bi et al.).

II. Claim 5 has been rejected as unpatentable over Yamaoka et al. in view of Sulzberg, Sorresso, Bi et al., and U.S. 5,492,059 (Reichel).

III. Claims 17-19 have been rejected as unpatentable over Yamaoka et al. in view of Sulzberg, Sorresso, Bi et al, and U.S. 3,847,614 (Mattor).

IV. Claims 37-41, 44, 45, 47, 50, 57-59, and 63 have been rejected as unpatentable over Yamaoka et al. in view of Bi et al.

V. Claims 42, 43, and 46 have been rejected as unpatentable over Yamaoka et al. in view of Bi et al. and Sulzberg.

VI. Claim 51 has been rejected as unpatentable over Yamaoka et al. in view of Bi et al and Mattor.

VII. Claim 56 has been rejected as unpatentable over Yamaoka et al. in view of Bi et al. and Sorresso.

VIII. Claim 65 has been rejected as unpatentable in view of Yamaoka et al. in view of Bi et al. and U.S. 5,674,664 (Tanikawa et al.).

Each of these rejections is respectfully traversed and addressed below in turn after a brief discussion of Applicants' claimed invention.

Applicants' Claimed Invention:

Referring to the four independent claims present in this reissue application, Applicants' invention relates to methods of making printing forms (such as printing plates) and their use in printing.

In Claim 1, as amended, the printing form is prepared by coating a radiation-sensitive ink (e.g. containing a radiation absorbing compound that is a

phthalocyanine pigment, and an IR absorbing dye) onto a hydrophilic support, imaging by digital laser means (either IR or visible imaging), and developing on-press using dampening rollers that are covered with a lithographic fountain solution to remove unexposed areas of the ink coating and leaving an oleophilic image in the exposed areas of the ink coating. It should be noted that the radiation-sensitive ink is applied before imaging. It is not used for on-press development that is carried out using the lithographic fountain solution.

Claim 25 is directed to a method of printing using a printing form similar to that obtained in Claim 1 except that the radiation-sensitive ink is not limited to phthalocyanine pigment and IR absorbing dye. However, the same radiation-sensitive ink applied prior to imaging is also used later in the printing operation, and the printing run length is predetermined so the ink coating thickness is predetermined. On-press development is carried out using a lithographic fountain solution.

Claim 37 is directed to a method of preparing a printing form in which a coating of a radiation-sensitive composition comprising a resin and IR absorbing material is applied to a lithographic support. A digital laser means is used for imaging, and development is carried out *in situ* on a printing press using a lithographic fountain solution, leaving an oleophilic image in the exposed areas of the radiation-sensitive coating.

Claim 59 is directed to a method of printing with similar steps as Claim 25 but using the coated composition of Claim 37. Development is carried out on-press using the lithographic fountain solution.

All of the claims then require the use of an "imageable coating" to be applied to a lithographic or hydrophilic support to provide an imageable layer that is then imaged using a digital laser. Development is carried out on-press, e.g. using dampening rollers or other means with a lithographic fountain solution, to remove unexposed areas of the applied layer and to provide an oleophilic printing image. Printing can be carried out simultaneously with or immediately after on-press development. As pointed out in the specification (Col. 3, lines 10ff), the claimed invention provides a number of advantages including reduced imaging time, reduced run length time, and control of digital imaging parameters.

Response to Rejection I:

The Office Action argues that Yamaoka et al. teaches radiation-sensitive compositions that can be coated onto a base, irradiated with light (visible or near-IR), and developed with aqueous solutions of organic alkali to form printing plates. The Office Action also argues that the "colorant" used in the photopolymerizable composition of Yamaoka et al. is a radiation-sensitive "ink" that can be a pigment. The Office Action admits that Yamaoka et al. fails to teach on-press development using dampening rollers and specific ink pigments, but argues that these features are taught in Sulzberg (phthalocyanine pigment), Sorresso (use of dampening rollers), and Bi et al. (on-press development). It is further argued that it would be obvious to use the alkaline developers of Yamaoka et al. on the dampening rollers of Sorresso to provide on-press development as taught in Bi et al.

Applicants respectfully submit that this rejection is in error because there is no reason to combine Bi et al. with either Yamaoka et al. alone or with the combination of the other three cited references.

Applicants submit (as admitted in the Office Action) that the combination of Yamaoka et al., Sulzberg, and Sorresso does not teach or suggest the subject matter of Claim 1. Specifically, the cited references do not teach or suggest a method in which the step of removing the unexposed areas in the ink coating is performed on a printing press using a lithographic fountain solution.

Yamaoka et al. describes a photopolymerizable composition that is subjected to irradiation at visible or higher wavelengths. The unexposed portions of the photosensitive sample are removed with a conventional alkaline developer (not fountain solution) in an off-press mode (Col. 14, lines 28-33). While Sorresso does report the use of dampening rollers to carry dampening solutions to printing plates, neither Sorresso or Sulzberg teach or suggest carrying out development according to the presently claimed invention on a printing press using a lithographic fountain solution. Thus, these three references lack at least one significant feature of the presently claimed invention and teach only off-press development.

The Office Action attempts to remedy this deficiency by citing the teaching in Bi et al. Applicants respectfully submit that there is no motivation to

combine the method of imaging a printing plate described in Yamaoka et al. with on-press development described in Bi et al.

The development step in Yamaoko et al. is not on-press, nor is it carried out using a fountain solution. Its off-press development mode using a highly alkaline developer cannot be adapted to an on-press mode using a fountain solution.

In contrast, Bi et al. teaches a lithographic printing plate that is imaged using ultraviolet radiation (Col. 20, lines 15-17, lines 56-58 and Col. 22, lines 39-41). The imaged elements plates may then be developed on-press (Col. 17, lines 1-10) using fountain/ink in various combinations (Col. 22, lines 42-47). Clearly, this on-press development is not carried out using a conventional alkaline developer. However, Bi et al. does not suggest the use of on-press development after imaging with infrared radiation. The two development systems (on-press vs. off-press) are highly incompatible and require very different developer solutions and conditions. Moreover, the imaging compositions and processes needed for off-press and on-press development are very different. Not just any radiation-sensitive composition can be developed on-press. The formulations must be carefully designed for development with the weaker lithographic fountain solutions and without the more active and corrosive alkaline developer. In this context, the formulation designed for UV irradiation and on-press development are not readily adapted for infrared imaging and on-press development.

Bi et al. teaches that on-press development is achievable only because of specific microcrystals in an overcoat layer (over the photosensitive layer), which microcrystals readily dissolve in the fountain solution, leaving voids, fissures, etc. that facilitate penetration of fountain solution and ink through the overcoat (Col. 7, lines 32-48). This teaching and other related teaching of the time suggest to a skilled artisan that one must do something in the imaged element to facilitate on-press development since the fountain solutions and printing inks are considerably "weaker" in terms of developability compared to the conventional highly alkaline developers normally used for off-press development. Thus, one cannot merely pick a known development system and expect it to work with any type of imaging composition, whether it is UV or IR-sensitive compositions. Each composition must be designed in terms of imaging components, polymeric binders, and various addenda to be developable in a

specific type of solution, equipment, conditions, and format. Imaging compositions described in Yamaoka et al. would be understood by a skilled artisan to be designed for dissolution or swellability in highly alkaline solutions. Developing those IR-imaged compositions using the teaching of Bi et al. simply wouldn't work—the fountain solutions would be too weak in removing imaging composition. If removal did occur, it would take hours—clearly defeating the purpose of on-press development described by Bi et al. So, the compatibility of on-press and off-press developable formulations, at least at the time of Applicants' filing, did not exist. The industry had clearly designed unique products for both off-press and on-press developable conditions and equipment.

Since none of Yamaoka et al., Sulzberg, and Sorresso suggests the use of on-press development of the claimed composition, and a skilled worker would not be expected to adapt the very different imaging chemistry and system of Bi et al. to that of the other three references, it is believed that the UV imaging and on-press development teaching of Bi et al. using a fountain solution is not combinable with the IR imaging and off-press development teaching in the other art.

Applicants respectfully submit that there is no motivation in either Yamaoka et al. or Bi et al. to include the on-press development step of Bi et al. using a fountain solution in the method of imaging a printing plate with infrared radiation and development using an alkaline developer described in Yamaoka et al.

The Office Action has merely cited four references that individually describe one or more features of Applicants' claimed invention but the reasoning or motivation for combining those teachings (especially Bi et al. with the others) is lacking within the four references themselves. Citing references to indicate that isolated features of Applicants' claimed invention are known in the art is insufficient for concluding that a combination of those features would be obvious, *Ex parte Hiyamizu* 10 U.S.P.Q.2d 1392 (USPTO BPAI 1988). Under Section 103, an unpatentability rejection requires some suggestion or incentive within the art to make the combination of teachings. That suggestion or incentive is lacking in this case—there is no technical reason why a skilled artisan would use the highly alkaline developers of Yamaoka et al. in the on-press development of Bi et al., or why a skilled artisan would decide that on-press

development with a far weaker fountain solution should be used in Yamoaka et al. since there is no suggestion that it is a better development process for IR-sensitive compositions.

For these reasons, the rejection of Claim 1 over Yamaoka et al. with Sulzberg, Sorresso et al., and Bi et al. is in error and should be withdrawn.

Since claims 2-4, 7-12, 14-16 and 24 ultimately depend on Claim 1, Applicants reiterate their argument with respect to Yamaoka et al., Sulzberg, Sorresso, and Bi et al. Applicants submit that these claims are also patentable over the teaching in the four references for at least the same reasons as Claim 1 is patentable and respectfully request this rejection be withdrawn for all of the claims.

Response to Rejection II:

Claim 5 is said to be unpatentable in view of the four references cited for Rejection I taken in addition with Reichel. The Office Action argues that Reichel teaches the use of sleeve-shaped printing forms and that it would be obvious to use such printing forms in the teaching of Yamaoka et al.

Since Claim 5 depends on Claim 1, Applicants reiterate their arguments presented above with respect to the rejection of Claim 1 (Rejection I). Furthermore, Reichel does not teach or suggest the subject matter of Claim 1 in which the developing step is performed on a printing press. Reichel reports an offset printing form that includes at least one printing plate that is in the form of a sleeve. While Reichel is interesting teaching about certain printing forms, it fails to supply the teaching missing in Yamaoka et al. relating to on-press development with a lithographic fountain solution, and it fails to provide any teaching or motivation to direct a skilled artisan to combine the teaching of Bi et al. with the rest of the cited art, and particularly with Yamaoka et al. Thus, the rejection of Claim 5 should be withdrawn.

Response to Rejection III:

The Office Action has rejected Claims 17-19 as being unpatentable over the four references cited in Rejection I with Mattor. Since Claims 17-19 ultimately depend on Claim 1, Applicants reiterate their arguments noted above with respect to the rejection of Claim 1 (Rejection I). The Office Action argues

that it would be obvious from Mattor to apply a certain predetermined thickness of the composition in Yamoaka et al. for a desired printing run length and that it would require only routine skill to provide a mechanical or automatic means to do this. While the Office Action points to teaching about a relationship of coating thickness and run length (Col. 1, lines 37-41), it fails to point to teaching that would combine that feature with all of the features of Claim 1, upon which Claims 17-19 depend. Thus, Mattor does not teach or suggest the subject matter of Claim 1 in which the developing step is performed on a printing press using a lithographic fountain solution, and it fails to provide motivation to overcome the deficiencies pointed out above in relation to the teaching in the other 4 cited references. Applicants respectfully request that this rejection be withdrawn.

Response to Rejection IV:

Claims 37-41, 44, 45, 47, 50, 57-59, and 63 are considered unpatentable over Yamaoka et al. and Bi et al. Claims 37 and 63 are the independent claims in this group of claims and they are the focus of Applicants' arguments.

The Office Action admits the deficiency in Yamaoka et al. by stating that "Yamaoka et al. does not explicitly state that his development step is done on-press. However, on-press development is well known in the art...as evidenced by Bi et al." (pages 9-10). As pointed out above with regard to Rejection I, Applicants respectfully submit that there is no motivation to combine the method of imaging a printing plate with infrared radiation described in Yamaoka et al. with on-press development using a fountain solution as described in Bi et al.

As noted in the Office Action, Yamaoka et al. describes photopolymerizable compositions that are highly sensitive to visible and near infrared light that may be used to form printing plates. The development step is not described or suggested as being on-press with a lithographic fountain solution. Rather, Yamaoka et al. teaches conventional off-press development using a conventional highly alkaline developer.

In contrast, Bi et al. describes a lithographic printing plate that is imaged using ultraviolet radiation and the plates may then be developed on-press using a lithographic fountain solution. However, Bi et al. does not suggest that

the step of on-press development can be done after imaging with infrared radiation. Clearly, the referenced on-press development is not carried out using a conventional highly alkaline developer. It is done with a far weaker lithographic fountain solution. Bi et al. does not suggest the use of on-press development after imaging with infrared radiation. The two development systems (on-press vs. off-press) are highly incompatible and require very different developer solutions and conditions. Moreover, the imaging compositions and processes necessary for off-press and on-press development are very different. Not just any radiation-sensitive composition can be developed on-press using a fountain solution. The formulations (especially the polymeric binders) must be carefully designed for development without the highly alkaline developer. In this context, the formulation designed for UV irradiation is not necessarily adaptable for infrared imaging.

Since Yamaoka et al. fails to suggest the use of on-press development of the claimed composition using a fountain solution, and a skilled worker would not be expected to adapt the very different imaging chemistry and system of Bi et al. to that of Yamaoka et al., it is believed that the UV imaging and on-press development teaching of Bi et al. is not combinable with the IR imaging and off-press development teaching in Yamaoka et al.

Applicants respectfully submit that there is no motivation in either Yamaoka et al. or Bi et al. to include the on-press development step of Bi et al. with a fountain solution in the method of imaging a printing plate with infrared radiation described in Yamaoka et al. The Office Action has merely cited two references that individually describe one or more features of Applicants' claimed invention but the reasoning or motivation for combining those teachings is lacking within the two references themselves. Citing references to indicate that isolated features of Applicants' claimed invention are known in the art is insufficient for concluding that a combination of those features would be obvious, *Ex parte Hiyamizu*, cited above. Under Section 103, an unpatentability rejection requires some suggestion or incentive within the art to make the combination of teachings. That suggestion or incentive is lacking in this case—there is no technical reason why a skilled artisan would use the highly alkaline developers of Yamaoka et al. in the on-press development with a fountain solution taught by Bi et al., or why a skilled artisan would decide that on-press development using a

weaker fountain solution should be used in Yamoaka et al. since there is no suggestion that the imaging compositions in that reference could be developed with a fountain solution. A skilled artisan would learn from its teaching that a highly alkaline developer is required.

For these reasons, the rejection of Claims 37 and 59 over Yamaoka et al. with Bi et al. is in error and should be withdrawn.

Since claims 38-41, 44, 45, 47, 50, 57, 58, and 63 ultimately depend on either Claim 37 or 59, Applicants reiterate their arguments with respect to Yamaoka et al. and Bi et al. Applicants submit that these claims are also patentable over the teaching in the two references for at least the same reasons as Claims 37 and 59 are patentable and respectfully request the rejection of all of these claims be withdrawn.

Response to Rejection V:

Claims 42, 43, and 46 are also rejected over the combined teaching of Yamaoka et al., Bi et al., and Sulzberg. Since Claims 42, 43, and 46 ultimately depend on Claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37 over Yamaoka et al. and Bi et al. (Rejection IV). Sulzberg describes various aqueous printing inks containing carbon black of phthalocyanine pigments but does not teach or suggest a method of imaging a printing plate with infrared radiation followed by on-press development using a fountain solution. Even if the pigments of Sulzberg could be used in the imaging compositions and methods of Yamoaka et al., that extension of Yamoaka et al. still fails to motivate a skilled artisan to use on-press fountain solution development as taught in Bi et al. In other words, Sulzberg fails to overcome the described deficiencies in the teaching of Yamaoka et al. and Bi et al. or the lack of motivation to combine Yamaoka et al. and Bi et al. Thus, Applicants request that the rejection of Claims 42, 43, and 46 be withdrawn.

Response to Rejection VI:

Claims 51 has been rejected similarly to the rejection of Claims 17-19 (Rejection III). Since Claim 51 depends on claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37 over Yamaoka et al. and Bi et al. (Rejection IV). As noted above, Mattor describes

lithographic printing plates having a photopolymer composition and may suggest a relationship between coating thickness and printing run length. However, Mattor does not teach or suggest a method of imaging the lithographic printing plates with infrared radiation followed by on-press development using a fountain solution. In other words, Mattor fails to overcome the described deficiencies in the combined teaching of Yamaoka et al. and Bi et al., or the lack of motivation for combining the two references. Applicants respectfully request that the rejection of Claim 51 be withdrawn.

Response to Rejection VII:

Claim 56 is considered unpatentable over Yamaoka et al., Bi et al., and Sorresso. Since Claim 56 depends on Claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37 over Yamaoka et al. and Bi et al. (Rejection IV). Sorresso is directed toward use of a dampening roller that may be used to carry water or other solutions to printing plates. Sorresso does not teach or suggest a method of imaging a printing plate in which the development step is performed on-press using a lithographic fountain solution. In other words, while Soresso describes a useful component of some of Applicants' embodiments, it does not overcome the described deficiencies in the combined teaching of Yamaoka et al. and Bi et al., nor does it provide motivation for combining those two references. Applicants respectfully request that the rejection of Claim 56 be withdrawn.

Response to Rejection VIII:

Finally, Claim 65 has been rejected as unpatentable over Yamaoka et al., Bi et al., and Tanikawa et al. (U.S. 5,674,664). Since Claim 65 ultimately depends on Claim 37, Applicants reiterate the arguments made above with respect to the rejection of Claim 37 over Yamaoka et al. and Bi et al. (Rejection IV). Tanikawa et al. is directed to a method of and apparatus for recycling paper. Specifically, it is directed to a method of and apparatus for regenerating copying or printing paper from paper bearing an image formed of thermofusible or heat-softening ink. Tanikawa et al. does not teach or suggest that the image-bearing support may be a lithographic support. Furthermore, Tanikawa et al. does not teach or suggest a method of imaging a printing plate with infrared radiation

followed by on-press development using a fountain solution. The mere use of regeneration means suggested in Tanikawa et al. is irrelevant to the presently claimed invention, and nothing in this reference would overcome the deficiencies of the two other references, or the lack of motivation for their combination. Thus, Applicants respectfully request that this rejection be withdrawn.

Response to Arguments on Pages 12-13 of Office Action:

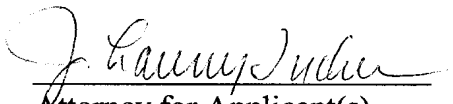
The Office Action argues that Bi et al. is cited merely for its teaching that on-press development is known for convenience and for saving time, regardless of the type of radiation used for imaging. This argument is made only with hindsight knowledge of Applicants' claimed invention and teaching. It is unsupported conjecture because no teaching (or even hints) in the cited art supports that statement.

Yamaoka et al. describes and teaches near-IR imaging and conventional off-press development using high pH alkaline developers. There is no hint of on-press development using the weaker fountain solutions because the systems and imaging compositions for both types of development at the time of filing the present application were incompatible.

Bi et al. is directed to UV imaging and on-press development using a relatively weak lithographic fountain solution. Nothing in that references suggests that the unique on-press development technology should or could be applied in different imaging systems and methods. Each mode of development is uniquely designed for use with specific imaging compositions. For off-press development, the compositions must be removable only in highly alkaline developers and not in fountain solutions used during printing. For on-press development, however, the imaging compositions are dissolvable in the weaker fountain solutions in the early stages of printing. Thus, there is no technical basis for concluding that the teachings in Bi et al. and Yamaoka et al. would be readily combined as suggested in the Office Action to lead one to the presently claimed invention.

In view of the foregoing amendments and remarks, reconsideration of this reissue application is respectfully requested. A prompt and favorable action by the examiner is earnestly solicited.

Respectfully submitted,



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